

Sandy Stephens

From: McCoy, Melinda <McCoy.Melinda@epa.gov>
Sent: Friday, March 20, 2015 1:50 PM
To: Sandy Stephens
Cc: Amanda Vincent; Steph Braden; Cook, Robert; Crocker, Philip; John Sheehan
Subject: RE: Dissolved oxygen criteria revisions in eastern LMRAP draft rule and supporting documents

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Sandy,

Thank you for the responses. We look forward to seeing the proposed rule in June.

Hope you have a good weekend,
Melinda

Melinda McCoy, Environmental Scientist
Water Quality Standards Program
USEPA Region 6 (6WQ-EW)
1445 Ross Ave., Ste. 1200
Dallas, TX 75202

214-665-8055 (phone)
214-665-6689 (fax)
mccoy.melinda@epa.gov

From: Sandy Stephens [mailto:Sandy.Stephens@LA.GOV]
Sent: Wednesday, March 18, 2015 10:57 AM
To: McCoy, Melinda
Cc: Amanda Vincent; Steph Braden; Cook, Robert; Crocker, Philip; John Sheehan
Subject: RE: Dissolved oxygen criteria revisions in eastern LMRAP draft rule and supporting documents

Hi Melinda,

Attached are the responses to EPA's comments on WQ091 (draft rule) and the supporting documentation for the DO criteria revisions in the eastern LMRAP Ecoregion. The attachment also contains answers to the technical questions posed by EPA. LDEQ's next step is to move forward with rulemaking. Tentative dates are: the Legislative Fiscal Office in May, rule proposed on June 20th, a public hearing on July 29th, and the comment period closing on August 5th.

If you have any questions or need clarification, feel free to call.

Thanks,
Sandy Stephens

From: McCoy, Melinda [mailto:McCoy.Melinda@epa.gov]
Sent: Thursday, December 18, 2014 12:03 PM

Sandy Stephens

From: Sandy Stephens
Sent: Wednesday, March 18, 2015 10:57 AM
To: 'McCoy, Melinda'
Cc: Amanda Vincent; Steph Braden; Cook, Robert; Crocker, Philip; John Sheehan
Subject: RE: Dissolved oxygen criteria revisions in eastern LMRAP draft rule and supporting documents
Attachments: LDEQ Responses to EPA R6 Comments_3-17-15.docx

Hi Melinda,

Attached are the responses to EPA's comments on WQ091 (draft rule) and the supporting documentation for the DO criteria revisions in the eastern LMRAP Ecoregion. The attachment also contains answers to the technical questions posed by EPA. LDEQ's next step is to move forward with rulemaking. Tentative dates are: the Legislative Fiscal Office in May, rule proposed on June 20th, a public hearing on July 29th, and the comment period closing on August 5th.

If you have any questions or need clarification, feel free to call.

Thanks,
Sandy Stephens

From: McCoy, Melinda [<mailto:McCoy.Melinda@epa.gov>]
Sent: Thursday, December 18, 2014 12:03 PM
To: Sandy Stephens
Cc: Amanda Vincent; Steph Braden; Cook, Robert; Crocker, Philip
Subject: RE: Dissolved oxygen criteria revisions in eastern LMRAP draft rule and supporting documents

Hi Sandy,

Thank you very much for sharing the draft rule and supporting documents for the DO criteria and subsegment revisions in the eastern LMRAP. Also, thank you for preparing the response to EPA's comment in the earlier Nov 2013 letter, which was very helpful. I appreciated having the past month to get acquainted with this body of work and draft rule. We only had two comments on the draft rule, provided in the Adobe attachment above.

We also had a few technical questions following up on the topic of applying the criteria to tidally-influenced streams. As noted in the attachment, we only pose these questions to further our general understanding of how LDEQ considered this topic in its evaluation; our questions are not intended to express a position one way or the other on the topic. Perhaps we could find some time during the week of Jan 5th for an informal call to discuss further? (I'll be out of the office from Dec 25th – Jan 2nd and suppose others will be out for the holidays too.) Please let me know if there's a date/time in Jan that would work for y'all, and I'll be happy to set up the meeting invite and get a call-in number.

Thank you again, and wishing y'all happy holidays!
Melinda

Melinda McCoy, Environmental Scientist
Water Quality Standards Program

LDEQ Responses to EPA R6 Comments:
EPA R6 Evaluation of LDEQ Draft Rule and Supporting Documents for Dissolved Oxygen (DO)
Criteria Revisions in eastern Lower Mississippi River Alluvial Plains (LMRAP) Ecoregion

EPA R6 Comment

1. Clarifying LAC 33:IX.1123, Table 3 to ensure 2.3 mg/L DO criterion applies to streams only. The June 7, 2013, eastern LMRAP UAA for the revision of DO criteria explains that the recommended 2.3 mg/L DO criterion (applicable Mar-Nov) applies to streams in the eastern LMRAP. However, as currently presented in the draft rule revisions for LAC 33:IX.1123, Table 3 and given the applicability statement at LAC 33:IX.1113.C (see italics below), the 2.3 mg/L DO criterion (applicable Mar-Nov) would [incorrectly] apply to all waters (not just the stream waterbody type) within the subsegments identified.

Numerical criteria identified in LAC 33:IX.1123, Table 3, apply to the specified water bodies, and to their tributaries, distributaries, and interconnected streams and water bodies contained in the water management subsegment...

The applicability to streams only needs to be clarified in LA's WQS, especially for those subsegments that include various waterbody types. Clarification could be accomplished by adding an EndNote to LAC 33:IX.1123, Table 3. For example, an EndNote could be added to the row that reads "Lake Pontchartrain Basin (04)" with an accompanying description at the end of the table to clarify that the ecoregion-based 2.3 mg/L DO criterion applicable Mar-Nov only applies to streams, with the 5.0 mg/L criterion applying Dec-Feb in streams and year round to other waterbody types within the subsegment.

LDEQ Response

1. LDEQ addressed the applicability of the 2.3 mg/L DO criterion to various water body types through exclusion. The eastern LMRAP study, resulting UAA and subsegment revisions focused only on stream water body types; lakes, bays, canals and other water body types were not included in the study and the 2.3 mg/L criterion is not proposed for application to other water body-type subsegments.

EPA R6 Comment

2. Use of "Ecoregion boundary" in subsegment descriptions. LDEQ revised the description for subsegment 040302 from "Amite River – From LA-37 to Amite River Diversion Canal" to "Amite River – From La. Highway 37 to *LMRAP Ecoregion boundary*" (italics added for emphasis). The following is a list of all subsegments in which LDEQ has similarly referred to the ecoregion boundary in subsegment descriptions:

- | | |
|---------------------|---------------------|
| • 040302 and 040306 | • 040902 and 040913 |
| • 040904 and 040914 | • 040905 and 040915 |
| • 040908 and 040917 | • 041204 |

While we understand that subsegment boundaries were revised to better reflect ecoregion boundaries (and do not have concerns with this approach), we believe it would be clearer (for

on-the-ground reference/ implementation) to refer to latitude/longitude or actual physical features (e.g., distance + direction from nearby road or highway crossing) in the subsegment descriptions rather than referring to "ecoregion boundary." (Note that this comment only pertains to the subsegment descriptions themselves, not to the boundary delineations.)

LDEQ Response

2. When revising the subsegment descriptions of the subsegment delineations in question, distinguishing physical features were considered; however those physical features were not available that could be used as references, and latitude/longitude is not used in LAC 33:IX.1123, Table 3. It was determined that ecoregion boundary was the most appropriate description that could be used. Latitude/longitude information is stored in LDEQ databases, along with other pertinent information that can be extracted from the databases when needed for sampling events and other activities.

EPA R6 Questions (for informal discussion):

We appreciate LDEQ's December 10, 2014, response to a comment in EPA's November 25, 2013, technical approval of the eastern LMRAP UAA for the revision of DO criteria. EPA's comment pertained to the appropriateness of applying the 2.3 mg/L DO criterion to estuarine segments and tidally-influenced streams. LDEQ's response indicates that the eastern LMRAP UAA does cover tidally-influenced reference waters and some areas with estuarine characteristics.

EPA R6 Comment

3. Given the above, we assume that LDEQ plans to apply the 2.3 mg/L DO criterion (applicable Mar through Nov) to all streams (including those tidally-influenced) within the "estuarine" subsegments, not just to inland, freshwater streams (please confirm).

LDEQ Response

3. LDEQ plans to apply the 2.3 mg/L DO criterion (applicable March through November) to the streams in the eastern LMRAP Ecoregion as indicated in the draft rule, WQ091.

EPA R6 Comment

4. Were eastern LMRAP reference sites 0264 (Pass Manchac) and 3496 (Middle Bayou) among the noted tidally-influenced reference waters? (We assume so, given the much higher specific conductivity levels at these two sites compared to others.) Also, we were wondering if LDEQ could elaborate on why there was such a high total abundance at site 0264. Were there other reference sites also considered to be tidally-influenced? (Table D-1 of the eastern LMRAP UAA indicates that Striped Mullet and Gulf Menhaden were both highly abundant and present in 12 and 5 collections, respectively).

LDEQ Response

4. All waters in the LMRAP Ecoregion are influenced by tides, as outlined in the *Louisiana Water Quality Standards Ecoregions: For use in Ecologically-Driven Water Quality Standards*ⁱ (Delineation Document) and the January 10, 2008 Memorandum of Agreement between the EPA R6 and LDEQⁱⁱ. While maintaining the ecoregion approach as an acceptable management tool approved by EPA R6, LDEQ recognizes the variability of characteristics within the ecoregion, in particular in zones of transition between ecoregions. Gulf menhaden and striped mullet are schooling fish, and when present, should be expected in high abundance.

EPA R6 Comment

5. As we understand, the objective of eastern LMRAP UAA was to complete a qualitative and quantitative ecological comparison between streams in the eastern and western portions of the LMRAP ecoregion. The purpose for the comparison was to evaluate the appropriateness of applying the Mar-Nov 2.3 mg/L DO criterion (originally developed for streams in the western portion of the LMRAP) to streams in the eastern portion of the LMRAP. If there was a greater prevalence of tidally-influenced reference streams in the eastern LMRAP compared to the western LMRAP (which seems to be the case), can LDEQ elaborate on how this difference was considered in the comparison and in the ultimate determination that it would still be appropriate to apply the 2.3 mg/L DO criterion to streams in the eastern LMRAP? (Note that we only pose these questions to further our general understanding of how LDEQ considered this topic in its evaluation; our questions are not intended to express a position one way or the other on the topic.)

LDEQ Response

5. Again, LDEQ recognizes the variability of characteristics within the ecoregion. The LMRAP Ecoregion characteristics are outlined in the Delineation Document. Reference streams were selected from within the LMRAP Ecoregion boundaries according to the protocol outlined in the 2008 MOA between EPA R6 and LDEQ and as outlined in the EPA R6-approved QAPPⁱⁱⁱ for the eastern LMRAP study. The emphasis for selecting reference streams is that they be least-impacted.

ⁱ Louisiana Department of Environmental Quality. 2014. *Louisiana Water Quality Standards Ecoregions: For Use in Ecologically-Driven Water Quality Standards*. Office of Environmental Services, Water Permits Division, Baton Rouge, Louisiana.

ⁱⁱ U.S. Environmental Protection Agency Region 6 and Louisiana Department of Environmental Quality. 2008. *Memorandum of Agreement: Establishment of Ecoregion-Based Dissolved Oxygen Criteria and Assessment Methods*.

ⁱⁱⁱ Louisiana Department of Environmental Quality. 2013. *Quality Assurance Project Plan (QAPP) for Evaluation of Aquatic Life Uses and Dissolved Oxygen Criteria and Collection of Minerals and Nutrient Data to Support Ongoing Criteria Development Efforts in the Lower Mississippi River Alluvial Plains Ecoregion*. Office of Environmental Services, Water Permits Division, Baton Rouge, Louisiana.

Sandy Stephens

From: McCoy, Melinda <McCoy.Melinda@epa.gov>
Sent: Thursday, December 18, 2014 12:03 PM
To: Sandy Stephens
Cc: Amanda Vincent; Steph Braden; Cook, Robert; Crocker, Philip
Subject: RE: Dissolved oxygen criteria revisions in eastern LMRAP draft rule and supporting documents
Attachments: EPA Cmts_Eval of eastern LMRAP DO draft rule pkg_121814.pdf
Follow Up Flag: Follow up
Flag Status: Flagged

Hi Sandy,

Thank you very much for sharing the draft rule and supporting documents for the DO criteria and subsegment revisions in the eastern LMRAP. Also, thank you for preparing the response to EPA's comment in the earlier Nov 2013 letter, which was very helpful. I appreciated having the past month to get acquainted with this body of work and draft rule. We only had two comments on the draft rule, provided in the Adobe attachment above.

We also had a few technical questions following up on the topic of applying the criteria to tidally-influenced streams. As noted in the attachment, we only pose these questions to further our general understanding of how LDEQ considered this topic in its evaluation; our questions are not intended to express a position one way or the other on the topic. Perhaps we could find some time during the week of Jan 5th for an informal call to discuss further? (I'll be out of the office from Dec 25th – Jan 2nd and suppose others will be out for the holidays too.) Please let me know if there's a date/time in Jan that would work for y'all, and I'll be happy to set up the meeting invite and get a call-in number.

Thank you again, and wishing y'all happy holidays!
Melinda

Melinda McCoy, Environmental Scientist
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Dallas, TX 75202

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mccoy.melinda@epa.gov

From: Sandy Stephens [<mailto:Sandy.Stephens@LA.GOV>]
Sent: Tuesday, November 18, 2014 2:05 PM
To: McCoy, Melinda
Cc: Amanda Vincent; Steph Braden
Subject: RE: Dissolved oxygen criteria revisions in eastern LMRAP draft rule and supporting documents

Sandy Stephens

From: Sandy Stephens
Sent: Tuesday, December 16, 2014 3:57 PM
To: 'McCoy, Melinda'
Cc: Amanda Vincent; Steph Braden
Subject: eLMRAP DO UAA - LDEQ Response to EPA Comment
Attachments: Draft eLMRAP DO UAA EPA Comment Ltr 11 25 2013.pdf; LDEQ Response to EPA R6 Comment_eLMRAP DO UAA_12-10-14.pdf

Hi Melinda,

Attached is EPA's comment letter regarding LDEQ's eLMRAP DO UAA. Also attached is LDEQ's response to the comment letter. If you have any questions/comments feel free to call or email.

Thank you,

Sandy Stephens
225-219-3218
Water Quality Standards
Louisiana Department of Environmental Quality



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

NOV 25 2013

Jenniffer Sheppard
Office of Environmental Services
Louisiana Department of Environmental Quality
P.O. Box 4313
Baton Rouge, LA. 70821-4313

Re: EPA Comments on Draft *Use Attainability Analysis of Inland Rivers and Streams in the Eastern Lower Mississippi River Alluvial Plains Ecoregion for Review of Dissolved Oxygen Water Quality Criteria* (June 7, 2008)

Dear Ms. Sheppard:

I would like to commend the Louisiana Department of Environmental Quality (LDEQ) and its staff in the development and preparation of the draft use attainability analysis (UAA) for the eastern Lower Mississippi River Alluvial Plains (LMRAP).

After its review of this draft document, the United States Environmental Protection Agency (EPA) does not have any significant points of concern. We would, however, suggest that the last paragraph of the executive summary, on pg. 6, and Table 4, on pg. 23, be modified to clarify that estuarine waters or tidally influenced streams or segments are not targeted in this study and/or proposed for criteria revision. As the narrative and table currently reads, it appears that all waters, including estuarine segments in the eastern LMRAP, are subject to the proposed dissolved oxygen (DO) criteria revision. The reference sites selected for this component of the study did not include estuarine waters, and it would be inappropriate to adopt proposed DO criteria for estuarine segments without analysis of estuarine references. By revising the narrative and table, LDEQ would eliminate such confusion before proceeding with rulemaking.

We look forward to working with LDEQ on the subsequent revisions to the water quality standards. If you have any questions or concerns, please contact me at (214) 665-9736.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Hubner", written over a horizontal line.

Matt Hubner
Water Quality Standards Coordinator
Watershed Management Section

cc: Sandra Stephens, Water Quality Standards, LDEQ

LDEQ Response to EPA R6 Comments:
**Draft Use Attainability Analysis of Inland Rivers and Streams in the Eastern Lower Mississippi River
Alluvial Plains Ecoregion for Review of Dissolved Oxygen Water Quality Criteria**

EPA R6 Comment

The United States Environmental Protection Agency (EPA) suggested that the last paragraph of the executive summary, on pg.6, and Table 4, on pg. 23, be modified to clarify that estuarine waters or tidally influenced streams or segments are not targeted in this study and/or proposed for criteria revision. As the narrative and table currently reads, it appears that all waters, including estuarine segments in the eastern LMRAP, are subject to the proposed dissolved oxygen (DO) criteria revision. The reference sites selected for this component of the study did not include estuarine waters, and it would be inappropriate to adopt proposed DO criteria for estuarine segments without analysis of estuarine references. By revising the narrative and table, LDEQ would eliminate such confusion before proceeding with rulemaking.

LDEQ Response

The characterization of Louisiana subsegments as “estuarine” in the water quality standards has been instrumental to the implementation of a 4 mg/L dissolved oxygen criterion and site-specific minerals (TDS, Cl, and SO₄) criteria in Louisiana’s coastal and/or coastal hydrology-influenced water bodies. As LDEQ continues to move forward with the use of an ecoregion approach as an effective means to refine the dissolved oxygen criteria across the state, the “estuarine” classification is no longer needed for implementation of the dissolved oxygen criterion in areas with ecoregion-based dissolved oxygen criteria; the estuarine ecology of an area is fundamentally incorporated into the ecoregion delineations. However, the “estuarine” characterization remains necessary to the implementation of site-specific minerals criteria.

The Use Attainability Analysis (UAA) for the revision of dissolved oxygen criteria in the eastern Lower Mississippi River Alluvial Plains (LMRAP) Ecoregion does cover tidally-influenced reference waters and some areas with estuarine characteristics. The Louisiana Water Quality Standards Regions (Ecoregions) document (i.e., the delineation document) outlines the geospatial data sets used to refine the state’s ecoregion boundaries. Revisions to the northern boundary of the eastern LMRAP Ecoregion were heavily based on tidal influence and biological communities associated with estuarine and tidally-influenced environments. Revisions to the southern boundary of the eastern LMRAP Ecoregion were based primarily on observed land form (soil type, geology, and land use) and vegetation. Also important to note is the presence of some freshwater marsh areas in the Coastal Deltaic Marsh (CDM) Ecoregion.

With use of the ecoregion approach, there will inevitably be areas of transition where the predominant characteristics of one ecoregion meet the predominant characteristics of another ecoregion.¹ LDEQ considered the varying characteristics of transition zones when refining the state’s ecoregion boundaries; however, LDEQ understands that additional refinements to ecoregion boundaries may be required or that site-specific criteria development processes may be needed to address conditions that may not be adequately covered by an ecoregion approach.

¹ From “Perspectives on the Nature and Definition of Ecological Regions,” by James M. Omernik, 2004, Environmental Management, 34, Suppl. 1, pp. S27-S38.

Sandy Stephens

From: McCoy, Melinda <McCoy.Melinda@epa.gov>
Sent: Tuesday, November 18, 2014 1:37 PM
To: Sandy Stephens
Cc: Amanda Vincent; Steph Braden
Subject: RE: Dissolved oxygen criteria revisions in eastern LMRAP draft rule and supporting documents

Hi Sandy,

Thank you very much for sharing this early draft of the LMRAP draft rule w/supporting documents. Amanda recently spoke with me to give me a heads up that this would be coming. I believe she asked us (EPA) to complete our review and provide any feedback by mid-December. Would one month from today (December 18th) work okay insofar as a deadline for me getting back to you?

Since we provided a technical review of a previous draft of the UAA, I don't anticipate any issues. Being new to the WQS role for LA, however, I would appreciate the full month to get acquainted with the draft rule, supporting docs. Thank you for the offer for a conference call. I will definitely let you know if I think it will be helpful.

Thanks so much!!
Melinda

Melinda McCoy, Environmental Scientist
Water Quality Standards Program
USEPA Region 6 (6WQ-EW)
1445 Ross Ave., Ste. 1200
Dallas, TX 75202

214-665-8055 (phone)
214-665-6689 (fax)
mccoy.melinda@epa.gov

From: Sandy Stephens [<mailto:Sandy.Stephens@LA.GOV>]
Sent: Tuesday, November 18, 2014 1:00 PM
To: McCoy, Melinda
Cc: Amanda Vincent; Steph Braden
Subject: Dissolved oxygen criteria revisions in eastern LMRAP draft rule and supporting documents

Good afternoon Melinda,

As you know, LDEQ is preparing to move forward with rulemaking for dissolved oxygen criteria revisions in the eastern Lower Mississippi River Alluvial Plains (LMRAP) Ecoregion, by sending the draft rule (WQ091) to the Louisiana Legislative Fiscal Office in January. Tentatively, the rule can then be proposed on Feb. 20th, a public hearing held on Mar. 30th, with the comment period ending on Apr. 6th. For your consideration, I have attached the signed Request to Initiate Rulemaking Activity (RIRA) form, a draft of WQ091, and the Eastern LMRAP UAA. Also attached are technical support documents that accompany the proposed revisions. These include the Louisiana Water Quality Standards Ecoregions: For Use in Ecologically-Driven Water Quality Standards, an Explanation of Subsegment Revisions in LMRAP, SPTF, and

Sandy Stephens

From: Sandy Stephens
Sent: Tuesday, November 18, 2014 1:00 PM
To: 'mccoy.melinda@epa.gov'
Cc: Amanda Vincent; Steph Braden
Subject: Dissolved oxygen criteria revisions in eastern LMRAP draft rule and supporting documents
Attachments: Eastern LMRAP_UAA_FINAL_merged.pdf; Explanation Subsegment Revisions_final 11-17-14.pdf; LDEQ2014-Ecoregion Delineation_FINAL_R1.pdf; WQ091 draft 1_for EPA review.pdf; WQ091 signed RIRA.pdf; WQMP Volume 4_9-9-14 final.pdf; WQMP_Vol4_Rev_APPENDIX A_final.pdf

Good afternoon Melinda,

As you know, LDEQ is preparing to move forward with rulemaking for dissolved oxygen criteria revisions in the eastern Lower Mississippi River Alluvial Plains (LMRAP) Ecoregion, by sending the draft rule (WQ091) to the Louisiana Legislative Fiscal Office in January. Tentatively, the rule can then be proposed on Feb. 20th, a public hearing held on Mar. 30th, with the comment period ending on Apr. 6th. For your consideration, I have attached the signed Request to Initiate Rulemaking Activity (RIRA) form, a draft of WQ091, and the Eastern LMRAP UAA. Also attached are technical support documents that accompany the proposed revisions. These include the Louisiana Water Quality Standards Ecoregions: For Use in Ecologically-Driven Water Quality Standards, an Explanation of Subsegment Revisions in LMRAP, SPTF, and CDM Ecoregions, and revisions to Volume 4 of the Water Quality Management Plan (including Appendix A). A potpourri notice will run in the same issue of the *Louisiana Register* as the proposed rule to announce that procedures have been initiated to amend Volume 4 of the Water Quality Management Plan.

If you have any questions or need clarification, please feel free to call me at 225-219-3218, or I can set up a conference call if that would be more convenient.

Thanks,

Sandy Stephens
225-219-3218
Water Quality Standards
Louisiana Department of Environmental Quality

Sandy Stephens

From: Sandy Stephens
Sent: Tuesday, June 18, 2013 3:27 PM
To: 'Hubner.Matt@epamail.epa.gov'
Cc: Jenniffer L. Sheppard; Steph Braden; Sara Daigle; Tara Nixon
Subject: UAA for Eastern LMRAP
Attachments: EasternLMRAP_UAA_FINAL_6-7-13 merged.pdf

Good afternoon Matt,

As you may recall, the Water Quality Section began investigating and refining dissolved oxygen criteria on a basin/ecoregion approach several years ago which resulted in the *Use Attainability Analysis of Barataria and Terrebonne Basins for Revision of Dissolved Oxygen Water Quality Criteria*. The WQ Section continued conducting the ecoregion dissolved oxygen criteria study as outlined in Quality Assurance Project Plan (#1026), QTRAK Number 12-335, approved July 11, 2012. Data collection was completed in December 2012 and data management, evaluation and analysis were completed April 2013. Attached for your technical review and approval is the resulting *Use Attainability Analysis of Inland Rivers and Streams in the Eastern Lower Mississippi River Alluvial Plains Ecoregion for Review of Dissolved Oxygen Water Quality Criteria*. Please call if you have any questions.

Thank you,

Sandy Stephens
225-219-3218
Water Quality Standards
Louisiana Department of Environmental Quality